

**CLAIMS:**

1           1.    A screen assembly for a shale shaker, the screen assembly  
2   made by a method, the method comprising

3                   applying glue in a glue pattern to at least one  
4   layer of screening material useful for screening fluid  
5   introduced to a shale shaker, said applying done by powered  
6   moving mechanical glue application means,

7                   wherein the method includes moving at least one glue  
8   dispensing manifold with a plurality of spaced-apart glue  
9   dispensing nozzles above the at least one layer of screening  
10   material to apply the glue pattern,

11                  combining the at least one layer of screening  
12   material to a second layer of screening material forming a  
13   screen combination,

14                  moving the screen combination apart from the powered  
15   moving mechanical glue application means, and

16                  cutting part of the screen combination from the  
17   screen combination.

1           2.    The screen assembly of claim 1 wherein the glue is heated  
2   moisture-curing hot melt glue.

1           3.    The screen assembly of claim 1 wherein the automated  
2   method further comprises

3                   moving with powered mechanical screen movement  
4   apparatus the at least one layer of screening material beneath  
5   the powered moving mechanical glue application means.

1           4.    The screen assembly of claim 1 wherein the at least one  
2   layer of screening material is three layers of screening material.

1           5.    The screen assembly of claim 1 wherein the part of the  
2   screen combination is mounted on screen assembly support means.

1           6.    The screen assembly of claim 5 wherein the screen  
2   assembly support means is from the group consisting of frame, strip  
3   support, perforated sheet metal, and perforated plate.

1           7. The screen assembly of claim 1, the method further  
2 comprising

3                   connecting hookstrip apparatus on each of two  
4 spaced-apart sides of the screen assembly.

1           8. The screen assembly of claim 1 wherein the at least one  
2 layer of screening material is at least two layers of screening  
3 material and the method further comprising

4                   sewing together with sewing material the at least  
5 two layers of screening material.

1           9. The screen assembly of claim 8, the method further  
2 comprising

3                   placing said sewn-together at least two layers of  
4 screening material in a heating apparatus,

5                   placing a coarse mesh layer on the at least two  
6 layers of screening material on the heating apparatus,

7                   placing on the coarse mesh layer a support with heat  
8 activated material thereon for adhering the support to the  
9 coarse mesh layer, and

10                  heating the coarse mesh layer, the at least two  
11 layers of fine screening material, and the support to adhere  
12 the support to the coarse mesh layer and the at least two  
13 layers of screening material to the coarse mesh layer.

1           10. The screen assembly of claim 1, the method further  
2 comprising

3                   moving said part onto a support, and

4                   cutting said part on said support.

1           11. The screen assembly of claim 10 wherein said glue is  
2 heated glue and said support has air flow holes therethrough to  
3 facilitate cooling of said glue.

1           12. A plurality of screen assemblies as in claim 1, said  
2 screen assemblies stacked in a stack with a piece of material  
3 between each two adjacent screen assemblies to inhibit glue  
4 together of adjacent screen assemblies.

1           13. A screen assembly made by a method for making a screen  
2 assembly for a vibratory separator, the method comprising

3               moving with screen movement apparatus at least one  
4 layer of screening material below a glue application  
5 apparatus, the glue application apparatus including a main  
6 body a plurality of movable glue nozzles movably connected to  
7 the body,

8               moving the movable glue nozzles with nozzle movement  
9 apparatus above the at least one layer of screening material,

10              applying with the movable glue nozzles an amount of  
11 glue flowing from the glue nozzles in a pattern to at least a  
12 portion of the at least one layer of screening material,  
13 wherein the glue is heated moisture-curing hot melt glue,

14              combining the at least one layer of first screening  
15 material with at least one layer of second screening material  
16 so that the at least one layer of first screening material is  
17 glued to the at least one layer of second screening material  
18 thereby forming a screen combination,

19              moving part of the screen combination onto support  
20 apparatus,

21              cutting said part of the screen combination from the  
22 screen combination, and

23              allowing the glue to cure.

1           14. The screen assembly of claim 13, the method further  
2 comprising

3               moving said part onto a support, and

4               cutting said part on said support.

1           15. The screen assembly of claim 13 wherein the support has  
2 air flow holes therethrough, the method further comprising

3               flowing air through the air holes to facilitate  
4 curing of the glue.

1        16. The screen assembly of claim 13 further comprising  
2                continuously moving the at least one layer of  
3 screening material with the screen movement apparatus so that  
4 a continuous screen combination is produced from which  
5 multiple parts can be cut and the method further comprising  
6                continuously cutting multiple parts from said  
7 screen combination.

1        17. The screen assembly of claim 13 wherein the screen  
2 combination is moved onto the support apparatus by dual opposed  
3 driven rollers between which the screen combination passes.

1        18. The screen assembly of claim 13 wherein the dual opposed  
2 driven rollers are each rotated at a substantially identical rate.

1        19. The screen assembly of claim 13 wherein the screen  
2 combination is inclined downwardly to facilitate movement of the  
3 screen combination in a direction away from the glue application  
4 apparatus.

1        20. The screen assembly of claim 13 wherein the method  
2 further comprises positioning a piece of material on said part to  
3 inhibit said glue from adhering to an item placed on said part.

1        21. A method for making a screen assembly for a vibratory  
2 separator, the vibratory separator including vibration apparatus  
3 for vibrating the screen assembly to impart vibratory forces to the  
4 screen assembly for vibrating the screen assembly during use of the  
5 screen assembly on the vibratory separator, the method comprising

6                applying glue in a glue pattern to at least one  
7 layer of screening material useful for screening fluid  
8 introduced to a vibratory separator, said applying done by  
9 powered moving mechanical glue application means, and

10                applying the glue in an amount sufficient so that  
11 said screen assembly while in use on the vibratory separator  
12 is able to withstand vibratory forces imparted thereto by the  
13 vibration apparatus of the vibratory separator,

14                wherein the glue is moisture-curing hot melt glue,

15 the method further comprising heating the glue,  
16 moving with powered mechanical screen movement  
17 apparatus the at least one layer of screening material beneath  
18 the powered moving mechanical glue application means,  
19 combining the at least one layer of screening  
20 material to a second layer of screening material forming a  
21 screen combination,  
22 moving the screen combination apart from the powered  
23 moving mechanical glue application means, and  
24 cutting part of the screen combination from the  
25 screen combination.

1 22. The method of claim 21 including mounting said part of  
2 the screen combination on screen assembly support means.

1 23. The method of claim 22 wherein the screen assembly  
2 support means is from the group consisting of frame, strip support,  
3 perforated sheet metal, and perforated plate.

1 24. The method of claim 21 further comprising  
2 attaching hookstrip apparatus on each of two spaced-  
3 apart sides of said part of the screen combination.

1 25. The method of claim 21 wherein the glue pattern comprises  
2 a plurality of intersecting lines of glue extending across the at  
3 least one layer of screening material.

1 26. The method of claim 21 wherein the vibratory separator is  
2 a shale shaker and the at least one layer of screening material is  
3 suitable for screening drilling fluid with drilling solids  
4 entrained therein.

1 27. The method of claim 21 wherein the at least one layer of  
2 screening material is a plurality of layers, the method further  
3 comprising

4 sewing together the plurality of layers.

1        28. A machine for making a screen combination for a screen  
2 assembly for a vibratory separator, the machine comprising  
3            powered moving mechanical glue application means for  
4 applying glue to at least one layer of screening material,  
5            said powered moving mechanical glue application  
6 means including at least one glue dispensing manifold with a  
7 plurality of spaced-apart glue dispensing nozzles positionable  
8 above the at least one layer of screening material to apply a  
9 glue pattern on the at least one layer of screening material,  
10           means for combining the at least one layer of  
11 screening material with a second layer of screening material  
12 to form a screen combination,  
13           means for moving the screen combination apart from  
14 the powered moving mechanical glue application means, and  
15           means for cutting part of the screen combination  
16 from the screen combination.

1        29. The machine of claim 28 wherein the means for moving the  
2 screen combination is dual opposed driven rollers between which the  
3 screen combination passes.

1        30. The machine of claim 29 further comprising  
2            the dual opposed driven rollers comprising a first  
3 roller and a second roller,  
4            the first roller drive by a first drive motor,  
5            clutch apparatus interposed between the first roller  
6 and the first drive motor,  
7            control apparatus for controlling rate of rotation  
8 of both the first roller and the second roller and for  
9 controlling the clutch apparatus,  
10           sensor apparatus for sensing rate of rotation of the  
11 second roller, the sensor apparatus in communication with the  
12 control apparatus,  
13           the control apparatus also for maintaining rate of  
14 rotation of the first roller and of the second roller

15           substantially the same.

1           31. The machine of claim 30 further comprising  
2                   control apparatus for controlling the machine.

1           32. The machine of claim 29 wherein each of the dual opposed  
2 driven rollers has its own dedicated drive motor.

1           33. The machine of claim 29 wherein at least one of the dual  
2 opposed driven rollers is substantially covered with material for  
3 inhibiting glue from sticking to said roller.